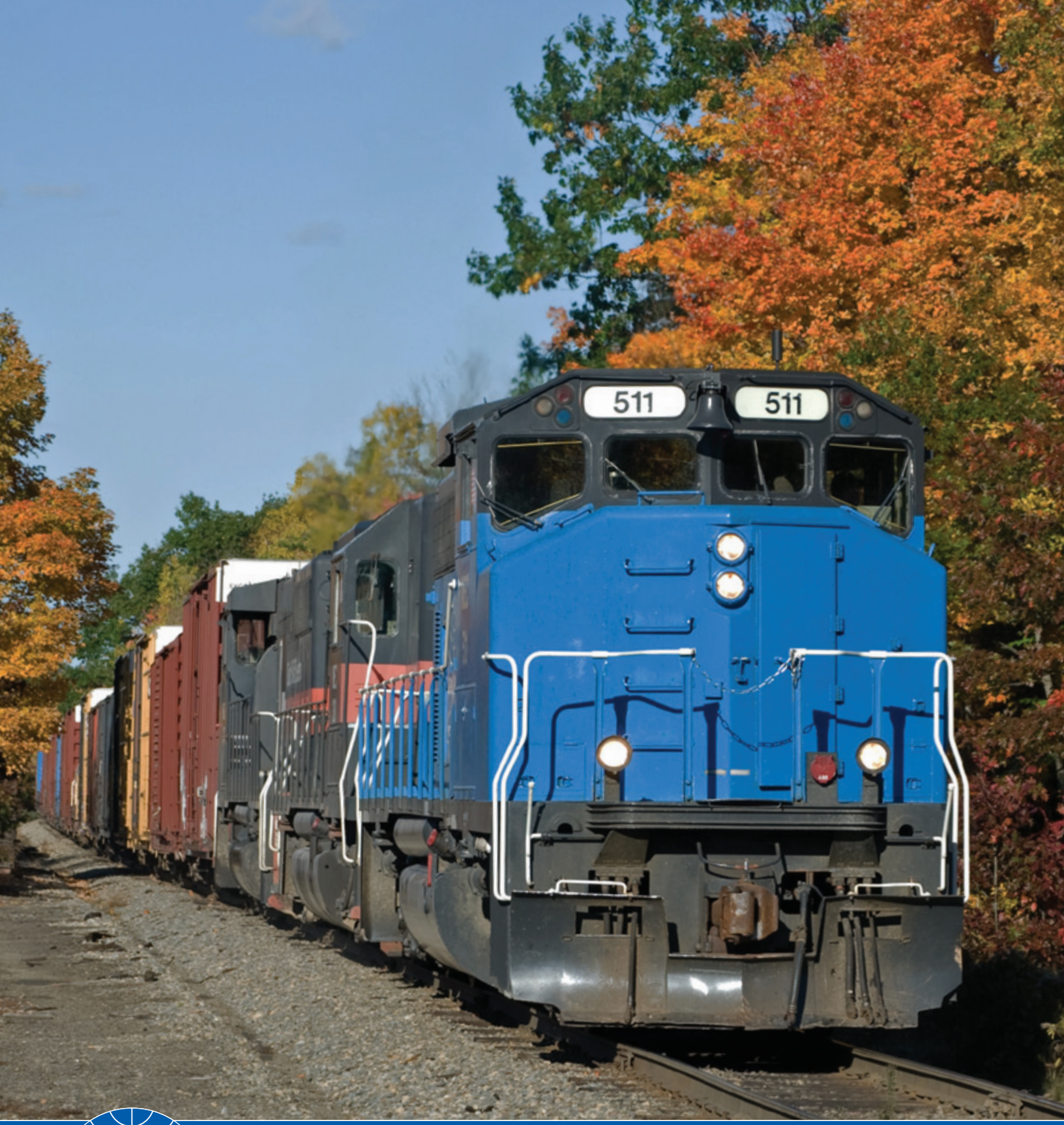

THE PAN AM CLIPPER

OCTOBER/NOVEMBER/DECEMBER 2009

FIND US ON THE WEB AT: www.panamrailways.com

THE PRESIDENT'S MESSAGE

Since our last edition of the Pan Am Clipper, the employees of the Springfield Terminal have been extremely busy. First, in March we received final approval for the Pan Am Southern transaction. In April, Pan Am Southern began operations. Starting in May we ramped up the capital improvements, and, since that time, we have been working overtime on the upgrade between Ayer, Massachusetts and Mechanicville, New York. By the end of the year we will have installed 35 track miles of welded rail and over 125,000 crossties. Our engineering crews have done an outstanding job, with zero injuries to date.

On the operations side, in October we began a new seven day per week scheduled turnaround service between East Deerfield yard and the western connections that has increased velocity and reduced dwell times. Beginning in December we will be running scheduled service from East Deerfield to Maine.

While our freight business has been off due to the worst recession in decades, and we have made painful cost reductions, our capital spending has continued in engineering, mechanical, and information technologies. Pan Am Railways will be ready to move the region's freight as we come out of the recession, with our continued emphasis on customer satisfaction and striving for zero employee injuries.

Sincerely,
David Fink
President
Pan Am Railways

INFORMATION

Pan Am Clipper is published four times a year by Pan Am Railways.

Editor: Kathleen Gregory
1700 Iron Horse Park
North Billerica, MA 01862
978.663.1130

PAN AM ON THE INTERNET

The Pan Am Railways website (www.panamrailways.com) offers car location information either through the car movement system (STARR) or the AEI database. CustomerService@panamrailways.com is another option to access car location information, etc.

UPGRADING OUR BRIDGES

LINE CAPACITY IMPROVEMENTS FOR 286 KIP AXLE LOADINGS

In April 2009, after receiving Surface Transportation Board approval, Pan Am Railways and Norfolk Southern Corporation officially partnered up to form a new railway company known as Pan Am Southern. One of the goals of this joint venture is to improve the rail route between Ayer, Massachusetts and Mechanicville, New York, known as The Patriot Corridor. One way to improve service is to upgrade the rail line to 286,000-lb. capacity (286 kip) to allow for the increased weight limits of the freight cars. (Note - In the United States, a kip is a unit of force that equals 1,000 pounds-force, used primarily by architects and engineers to measure engineering loads. Source – Wikipedia.) For this to be accomplished, all the bridges on the line must achieve a rating at or above 286 kips at their timetable speed in order to be deemed safe to carry increased weight limits.

Bridge ratings tell us the load capacity a bridge is designed to safely take. Many factors are considered when rating a bridge. These include span length, size and strength of bridge material, train speed, and bridge deck type. A rating factor is determined by dividing the allowable capacity of the bridge members by the actual loading applied to them by the train. This rating factor is then multiplied by the loading (in the case of a 286-kip 4-axle car, you would multiply by 286) to obtain the rating for that specific bridge. In order for the line to accommodate the heavier freight cars, some of the bridges need strengthening to increase their rating to the required 286 kip rating.

There are twenty-one bridges on Pan Am Southern flagged for line capacity improvements. Some will entail sub-structure repairs, others will require steel repairs and some will need a total superstructure replacement in order to meet the mandated 286 kip rating. We are currently in the process of designing these replacement bridges as well as drawing up plans for retrofitting those not yet designated for replacement.

The process of designing a steel bridge can be time consuming. Ideally, choosing steel members that are similar or smaller in depth than the existing bridge members is preferable. This is especially important if there are clearance issues underneath the bridge. Also, selecting the lightest shape member possible in order to hold down costs is always a good option. Keeping all that in mind, the components chosen must also be strong enough to take the loading and, in addition, must have a minimum deflection. Also, when replacing a bridge it is important to keep the bridge outage at a minimum. On bridges with double tracks, we try to employ a two phase construction. This means keeping one side of the bridge open while replacing the other side, then vice versa, keeping the train traffic flowing and causing little or no bridge outage as we work towards meeting the goals of Pan Am Southern.

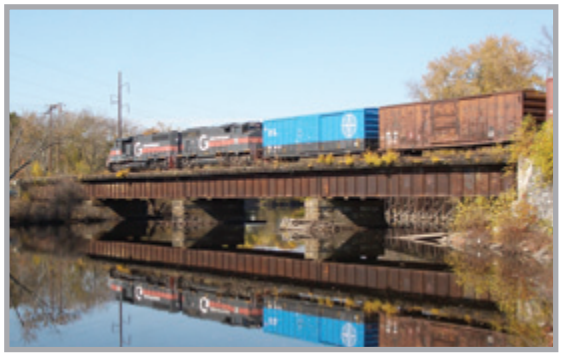

Photo provided by: Curt Treadwell

Contributed by:
Cindy O'Neil, Assistant Structural Engineer

ADDRESS CHANGE?

Let us know your new and your old address. Fax it to 978.663.6907 or send it to the Editor, Pan Am Clipper.

IDEA SUBMISSION

If you have a story idea, fax it to us on a single sheet of paper at 978.663.6907 or send it via MEMO to the editor.

CREDITS

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Photo of NMED at Greene, ME

Back Cover Photo by Jose Nevarez
Photo of Finished track work at McBride's Crossing

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EXTREME MAKEOVER: LOCOMOTIVE EDITION

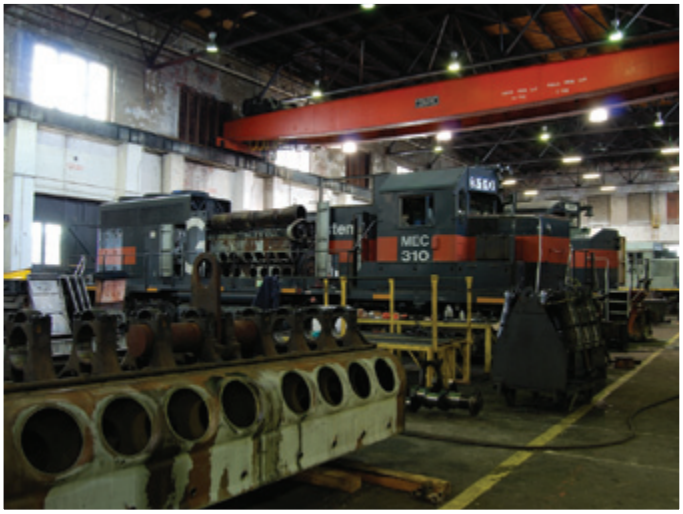
Pan Am Railways' heavy repair facility in Waterville, Maine is back in the business of overhauling locomotives. The first program locomotive to receive a rebuilt engine is the MEC 381. As of this writing, the MEC 310 is in the shop, next in line for a complete engine rebuild.

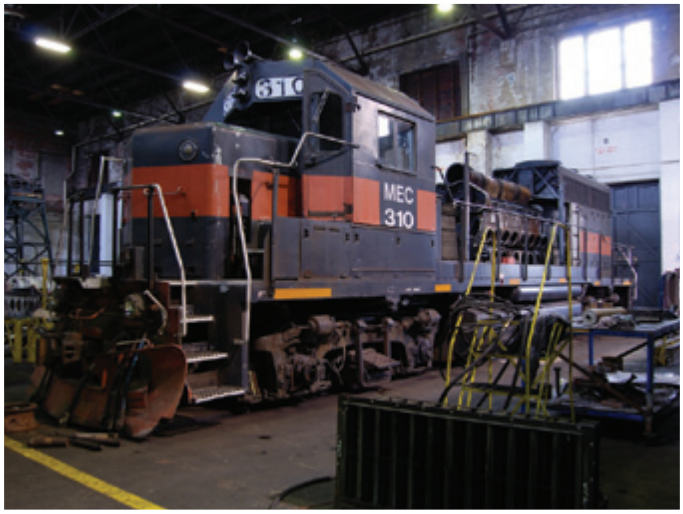
Employees at Waterville are enthusiastic about the program that got underway the first week of September 2009. The engine overhaul actually started before the 381 was taken out of service. Using a spare 645E3 engine block that had been surveyed and repaired at National Repair, and a crankshaft that was refurbished by Chrome Crankshaft, the engine was in the process of being revamped several weeks prior to the 381 coming to Waterville. By preparing the replacement rebuilt engines ahead of time, the locomotive only needs to be out of service just long enough to remove the old engine and install the rebuilt engine. Otherwise, the locomotive would be idle during the entire engine rebuild process, which could take several additional weeks while the original block is completely disassembled and restored.

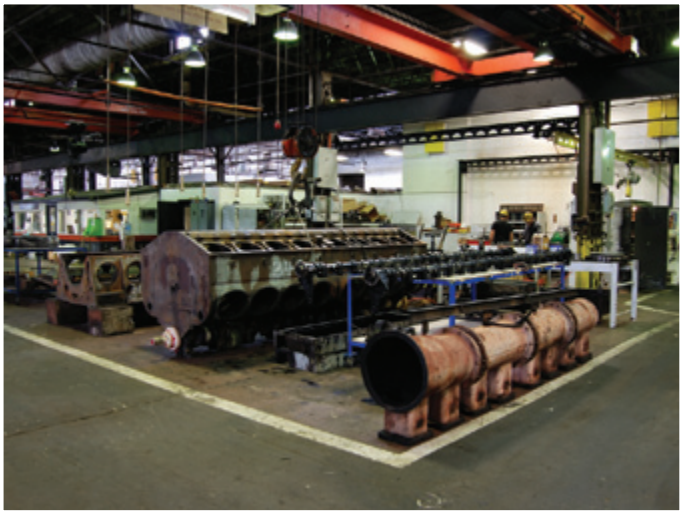
Engine blocks that are removed from locomotives are completely disassembled, cleaned and inspected. If need be, defective blocks and crankshafts are sent out for repair before being returned to the Shop in "like new" condition. The Shop employees then assemble the engines according to factory specs, replacing all gaskets. Subsequently, new main, connecting rod and camshaft bearings are installed. Water and oil pumps are rebuilt, new fuel injectors and reconditioned turbochargers and governors are installed.

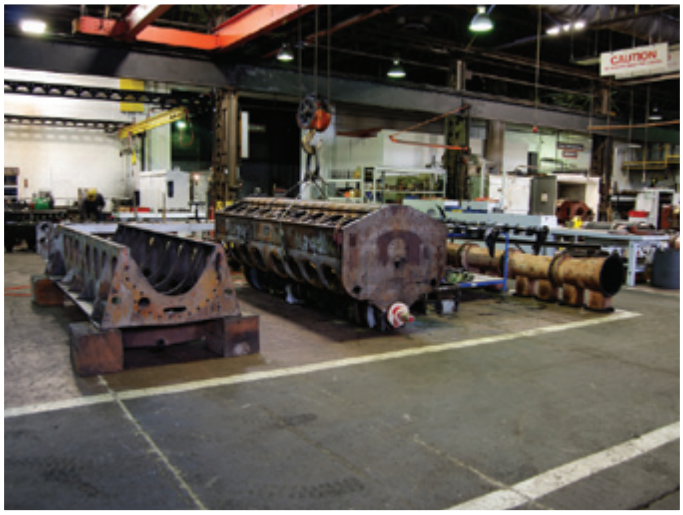
The rebuilt 645E3 turbocharged engine is installed on the locomotive frame and mated to the AR-10 alternator. All cooling water and lubricating piping connections are completed before the final assembly and installation of the hoods and hatches. Before being released for train service, the locomotive goes to the loadbox where the engine can be test run at all full horsepower in all throttle settings, making sure that all lube oil, fuel, exhaust, and cooling systems are functioning properly. After a successful load test, the Locomotive is released for train service. Following thirty days in service, the locomotive will return to Waterville for an inspection and re-torque of all bearings and gasketed components. At this time, the overhauled locomotives will be re-painted in the new Pan Am Railways livery. Before too long, more new blue locomotives will be seen pulling freight all over our system.

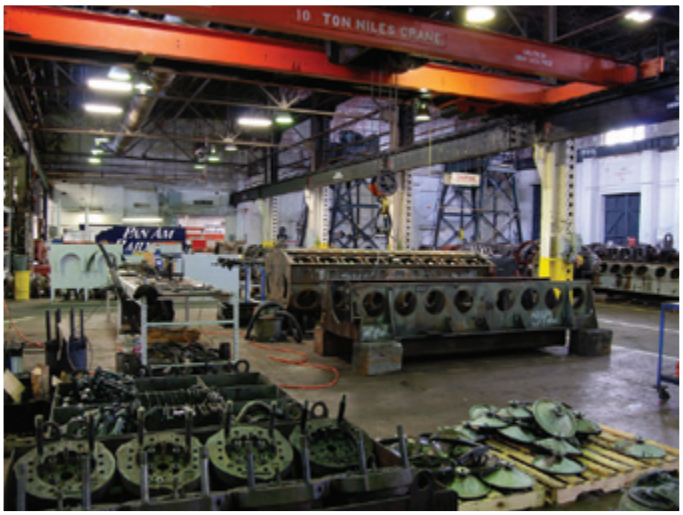
Contributed by:
William Mayo
Superintendent-East
Mechanical Department

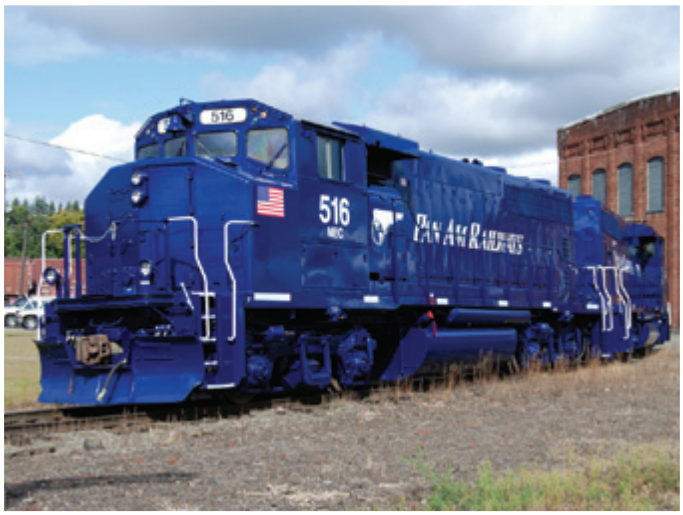












Photos provided by: Michael Peverett

BLOWING IN THE WIND

It should come as no surprise that energy requirements in the twenty-first century are greater than ever before. To meet this growing need for increased power while maintaining an ecological commitment to the planet, more and more alternative sources for generating electricity are emerging as viable options to the more conventional ones that most of us are accustomed to. The railroads are doing their part in this energy evolution. For example, in addition to the coal trains that have long been a part of our history, the railroads are now being called upon to move such non-traditional freight as windmills. Case in point, in 2009 Pan Am Railways participated in hauling a significant number of windmills from Barbers Station (Massachusetts) to Northern Maine Junction, Maine in conjunction with two wind farm projects in Maine and Nova Scotia, respectively.

Although windmills have been in use as a matter of practicality for farmers and ranchers throughout the world for centuries, the concept of wind energy has received unprecedented attention in recent years. Federal mandates as well as an overall culture change have made wind energy an attractive solution for “green” energy; and by now we are all familiar with the expression “go green”, which has become ingrained in our modern vocabulary.

The premise behind wind energy is similar to that of most energy generation - capture a force to turn a shaft with magnets inside a field of copper coils and harness the electric field to be distributed through the power grid. Power itself is measured in watts, and a megawatt (MW) represents one million watts of power. To reference a regional perspective, it is a matter of public record that in 2008 the Bow, New Hampshire power plant produced 459-MW of energy, whereas 1,245-MW of energy was yielded at the Seabrook, New Hampshire plant. As stated, the global focus is now shifting to such other renewable sources as the wind, and it may take several forms.

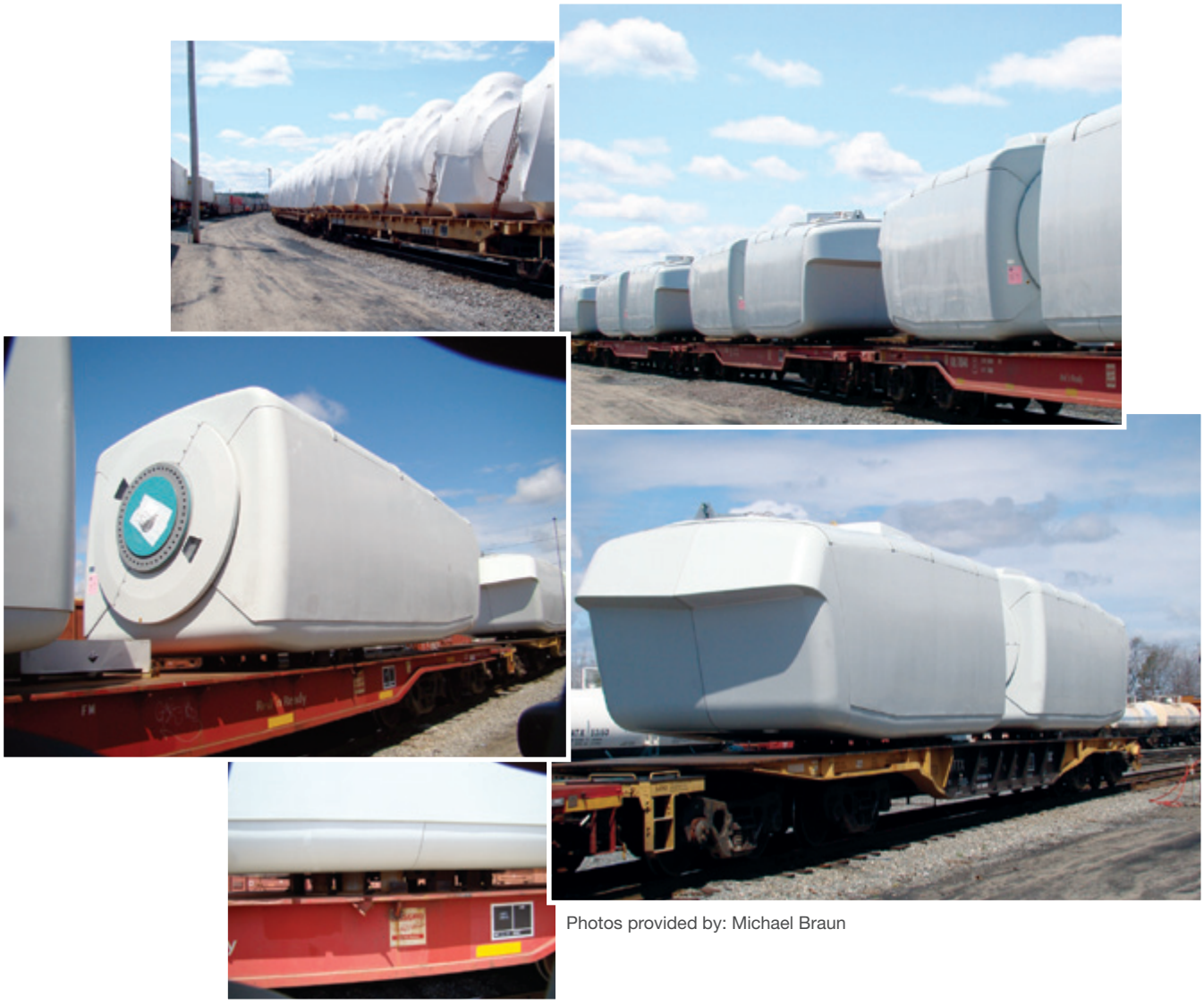
Windmills vary in size. Generally, land-based windmills can produce up to 2.5-MW annually, while current offshore units have the capability to produce up to 5-MW. It is reasonable to assume that wind energy is not going to replace our power needs anytime soon; however, experts believe that a realistic amount of America’s energy from wind power is now around twenty percent. How reasonable is this? In certain parts of Germany, wind power averages twenty-five percent of their daily power; and, in Denmark, the figure at times can range as high as one hundred percent.

With per turbine transportation costs ranging as high as one hundred fifty thousand dollars, rail has proven to be up to fifty percent cheaper than other surface transportation options over long distances. And rail’s facility for handling bulkier, heavier items affords the manufacturing sector the ability to make larger sections of machinery, which leads to cheaper assembly costs and a stronger product.

In 2008, more than twenty states actively planned, expanded or opened windmill manufacturing facilities. That, combined with millions of stimulus dollars being earmarked for renewable energy, means that wind energy manufacturing will be on the rise for decades to come. In preparation for this inevitability, several rail car owners have modified existing flat car equipment to handle the massive machine cabinets and blades ranging in size up to fifty meters. Add to this the railroad’s capacity to move freight further relative to the amount of fuel used, and the future is looking green indeed.

Contributed by:
Douglas Steward

Wind Turbine - *(noun)* is a rotating machine which converts the kinetic energy of wind into mechanical energy. If the mechanical energy is used directly by machinery, such as a pump or grinding stones, the machine is usually called a windmill. If the mechanical energy is instead converted to electricity, the machine is called a **wind generator, wind turbine, wind power unit (WPU), wind energy converter (WEC), or aerogenerator**.
Source – Wikipedia.



Photos provided by: Michael Braun

GEARING UP FOR WINTER

BE SAFE

There is never a shortage of theories and speculation surrounding the season of winter and “whether” it will be a mild one or an especially tough one to “weather”. A lot has to do with perspective and what line of work we are in. Here in the Transportation Department and all along the railroad, wintertime means that our workforce must be extra vigilant and use stricter criteria in carrying out all of their duties.

New England winters are normally cold and damp with significant snow accumulation, and snowfall amounts generally increase further north and away from the ocean. Typically, this means that snow conditions will likely fluctuate across the Pan Am Railways (PAR) route, ranging from extreme volumes in central Maine, eastern New York, and western Massachusetts, to lesser amounts in eastern Massachusetts and southern New Hampshire. It is not unusual for it to be raining at our North Billerica, Massachusetts headquarters point while snow falls intensely in the area that historically incurs the heaviest buildup, namely, the Rumford Branch in central Maine, or the west end of the railroad which covers western Massachusetts and eastern New York. Surprisingly, official snowfall records are only available for three locations on the PAR system – Concord, New Hampshire; Portland, Maine; and Gray, Maine - and they happen to be within one hundred miles of one another!

While a snow event of any magnitude can test our mettle and tax the resources of the railroad, perhaps more dangerous is the rain, sleet or hail that often builds up before freezing into a slushy mess, or even flood conditions. This type of storm can effectively immobilize the infrastructure and shut down a district indefinitely, going from one extreme to the other in a span of just a few miles.

When Mother Nature throws down the gauntlet, there is a heightened awareness across the railroad that winter conditions create additional hazards. Our employees become more conscious of the

Photo provided by: Eric Emery

Photo provided by: Deb Emery

environment they are working in, and, when conditions warrant, take extra precautions. Walking is more difficult and could lead to slips and falls; consequently, to avoid injury, employees know enough to move around with more deliberation. Many of the tools and apparatus that are utilized in the course of normal duties may be blanketed in white, so vehicles need to be brushed off and pathways swept clear, sanded and/or salted; moveable points on track switches should be cleared out and locomotive walkways and ladders should be kept free of snow and ice; normal tools used in the outdoors have to be protected or cleared from snow accumulation. All of these tasks take time and may slow down production, crews, or the operation of trains over the railroad. But it is all in the name of safety.

After a snowfall covers the tracks, the first few trains through generally clear sufficient amounts of snow from the tops of the rails. Our locomotives are equipped with a snowplow that reaches to within three inches of the rails. Between the plow and the wheels on the rails, enough snow is removed to facilitate operations, the downside being that, unfortunately, the plow fills back in any switches that had been previously cleaned out, most likely requiring additional time to re-clean them. Not to mention the accumulation between the rails, known as the core, and windrows alongside the tracks. When subsequent storms yield additional snowfall, the core and windrows pack down, sometimes becoming as solid as ice.

While the core is still fresh or soft, it can be removed, and the windrows moved back, by the use of ballast regulators equipped with wedge plows. The Engineering Department drops the blades between and around the rails to clean out the core. When the snow gets too deep or the core too solid, the regulators are put aside in favor of the heavyweights in our arsenal, specifically the Russell plows and Jordan Spreaders that are kept in working order by our Mechanical Department. Designed expressly to move snow, the plows are best for clearing mainlines while the spreaders, with their longer wing blades, are more useful for pushing snow off to the side and more conducive to clearing yard tracks.

GEARING UP FOR WINTER
CONTINUED

Once the cores are taken out and windrows moved, track inspections may resume. Movement on and around the tracks becomes easier as the sunshine heats the right of way and melts the remaining snow around the track structure, much the same as it does on roads and highways. Just a few days after running the plows, the sight of exposed tracks and ballast will make a striking contrast with the rest of the countryside covered in white.

In order to minimize delays and lessen their effect on our customers, it takes the concerted effort of key participants at Pan Am Railways; in particular, our Transportation, Engineering, Mechanical, Marketing and Sales, Safety and Purchasing/Stores departments. Teamwork is what keeps the railroad running and minimizes delays.

As the season wears on and the days get longer, all evidence of the snow pack will disappear and memories of the time when snowplows “roamed the earth” fade into the background. Then attention will be turned to the challenges the next season may bring.

The seasonal cycle presents many variables and by now we know that no two winters are exactly alike. We remind all Pan Am employees to maintain a safe work place throughout the year and to be prepared for anything. In so doing, we can all reach our common goal of serving our customers in a dependable, reliable manner and going home to our families in the same condition we came to work in.

Contributed by:
Steve Belforti
Assistant to VP-Transportation

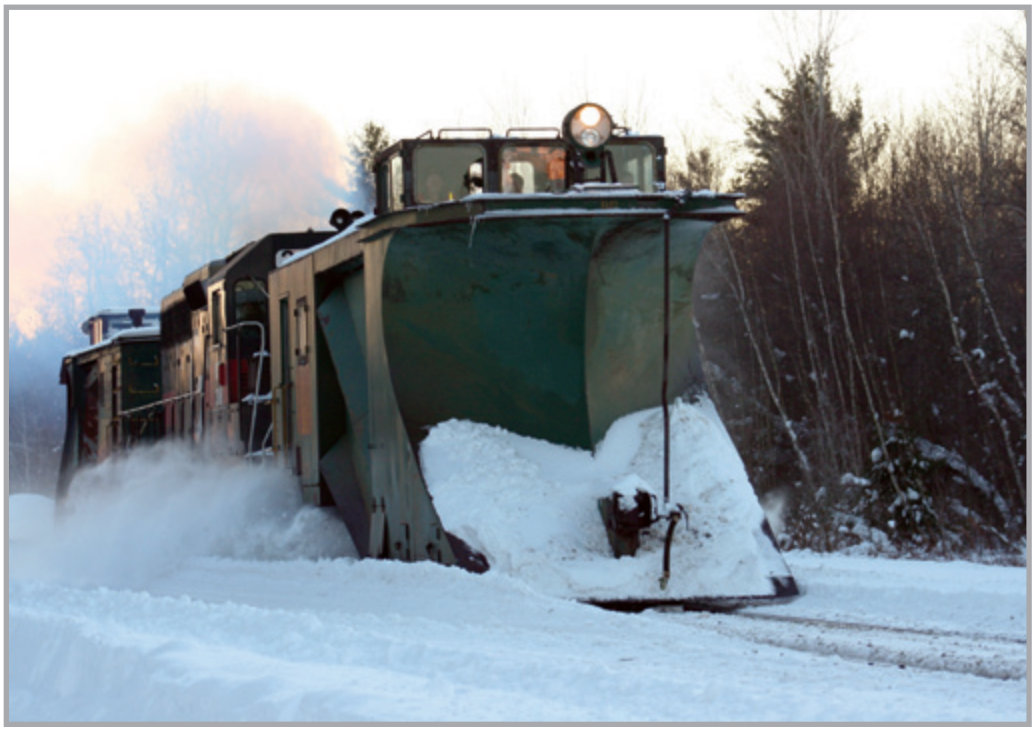


Photo provided by: Deb Emery

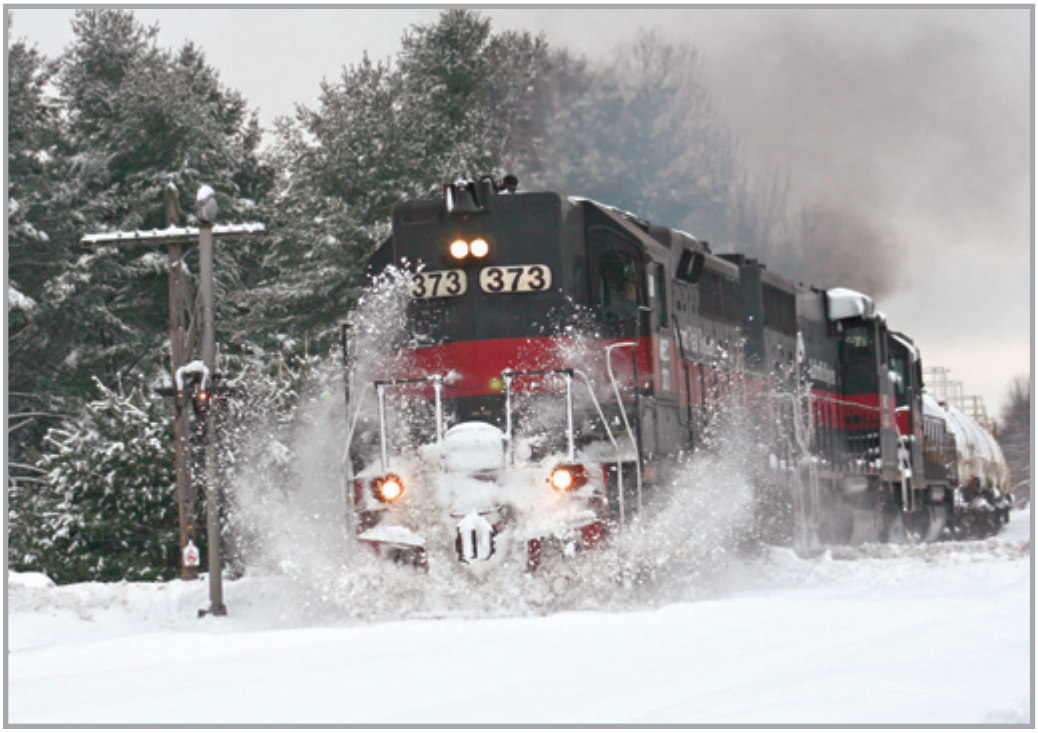


Photo provided by: Deb Emery

Photo provided by: Ed Felten

REACHING AN AGREEMENT

The fourteen (14) labor agreements in place on Pan Am Railways began to "expire" in June of 2007. Since then, we have been actively engaged in contract negotiations with the eleven (11) different labor unions on the property. While the details must remain confidential, the following summary is intended to shed some light on the collective bargaining process on the railroad.

In Labor Relations terminology, the railroad is referred to as the "Carrier" and the labor union as the "Organization." Carrier officials and various representatives from the Organizations engage in a dialogue referred to as "collective bargaining" that, in turn, leads to the existing collective bargaining agreements ("CBA's") being modified and extended.

Technically speaking, railroad CBA's do not "expire." Rather, under the Railway Labor Act (RLA), railroad CBA's become subject to potential changes at the end of a specified moratorium period. When the moratorium period ends, collective bargaining may begin. The terms of the current CBA must remain in full effect until a "new" agreement is reached, regardless of whether negotiations take several months, or even several years, to complete.

To initiate contract discussions, the Carrier or the Organization presents the other party with a "Section 6 Notice." This serves as notice that the party in question desires to change the "status quo" and amend various portions of the current agreement. The parties must then engage in direct contract negotiations. Over time, if the parties fail to reach an agreement on the proposed contract changes, either party can request that a mediator from the National Mediation Board (NMB) intervene. It should be noted that the NMB, not the relevant parties, determines the length of time for mediation to run its course.

If the Carrier and labor organization are released from mediation without a new CBA, they may consent to what is known as "arbitration", whereby an arbitrator reviews the respective positions of the parties and issues a binding resolution. On the other hand, the parties could, in fact, decide against arbitration, which they are free to do, and a thirty day "cooling off" period will commence. Should the parties fail to reach an agreement after such time, either party could invoke what is referred to as "self help", a scenario that entails ignoring the "status quo" and taking unilateral action that may adversely affect the other party. For the sake of brevity, one example of "self help" available to the Carrier is a "lock-out" of its employees; and one example of "self help" available to the employees is a "strike."

Once this stage in the collective bargaining process has been reached, the parties' inability to come to a new agreement might very well pose a threat to interstate commerce. However, to avoid an undesirable national crisis, the President of the United States has the authority to establish a Presidential Emergency Board (PEB) to investigate the labor dispute and propose recommendations for resolving the negotiations.

Although this is only a brief overview of an extensive and detailed process, it should be emphasized that the extensive guidelines for collective bargaining under the RLA were implemented with the intent of ensuring that the "expiration" of a railroad CBA will not cause a work stoppage in the railroad industry. A very real and recent example of this objective being met is the resolution of the long running contract negotiations between Amtrak and its employees, which was resolved in early 2008. After close to a decade (1999-2008) of unsuccessful contract negotiations, Amtrak and the unions agreed to terms that essentially mirror the recommendations proposed by a PEB. The significant point to be emphasized is that these negotiations played out with no disruption to service.

With such a well established and reliable system in place in the rail industry, Pan Am Railways' Labor Relations Department is confident that the current round of contract negotiations will continue to move forward in a methodical, positive and professional manner, to the mutual satisfaction of everyone involved.

Contributed by:
Anthony Lomanto
VP-Human Resources

COVERING ALL THE BASES

DUPONT AND PAN AM RAILWAYS TEAM UP

TRANSCAER® (Transportation Community Awareness and Emergency Response) is a national outreach group (http://www.transcaer.com) whose members consist of volunteer representatives from the chemical manufacturing, transportation, distributor, and emergency response industries, as well as the government. It seeks to: promote safe hauling and handling of certain sensitive materials, educate and assist communities near major shipping routes about such matters, aid community emergency personnel in planning for associated incidents.

Not long ago, the DuPont TRANSCAER® cars rolled into our Waterville, Maine railroad yard to conduct on board training and practical instruction that could conceivably aid cities and towns in tailoring their emergency response strategies as relate to the movement of chemicals via rail. The course was designed to provide an awareness of the materials traveling safely by rail through those communities, suggest ways for local officials to develop and evaluate their emergency response plans, identify placards and the different types of tank cars, and recommend what measures to take in the event of any variables along the way.

The sessions were scheduled over a week's time to allow for statewide participation and were split up into a Four Hour Awareness Course and an Eight Hour Operational Training Course. First responders from the paper mills welcomed the chance to take part in the eight hour class, while attendees from Pan Am Railways benefited most from the four-hour class. Some of the local hospitals sent medical response staff that is typically called to the scene in cases of injury resulting from a substance release. In fact, the TRANSCAER® personnel were very accommodating and even conducted an evening class for the area's volunteer Fire Department recruits who work other jobs and would have otherwise been unable to attend.

The DuPont TRANSCAER® train is made up of a fully equipped tank car, boxcar and caboose. And although materials are carried across rail networks in other types of cars, the Waterville discussion group primarily focused on tank cars. To simplify the training, several valves had been cut open beforehand in order to expose their components and show their function. Inside the domes on top of the tank cars, the instructor also reviewed the mechanics, while explaining some measures to counteract any prospective leaks.

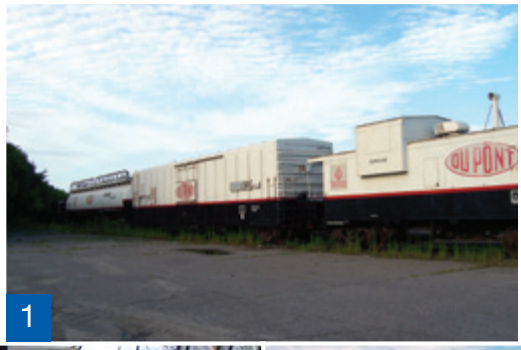
Response procedures specific to cars containing hazardous chemicals were highlighted for many of Pan Am Railways' managers and transportation personnel, as well as how to approach the incident, who to contact, and what information to give to responders. A video was shown on the construction of tank cars and the various degrees of thickness of the steel during the fabrication process, the different types of welded seams and where they would likely fail.

At the conclusion of each session, all participants were given certificates of completion. When polled about the training, the feedback was very positive, and everyone expressed their appreciation for the opportunity to take part in the program.

Thanks to Pan Am Railways and DuPont TRANSCAER®, this proactive approach helps to guarantee the safety of those who may be called upon someday to implement the emergency response techniques which not only protect our employees and other first responders, but, above all else, the community. Bottom line, the more that all involved can learn about a particular scenario in advance, the better the outcome will be.

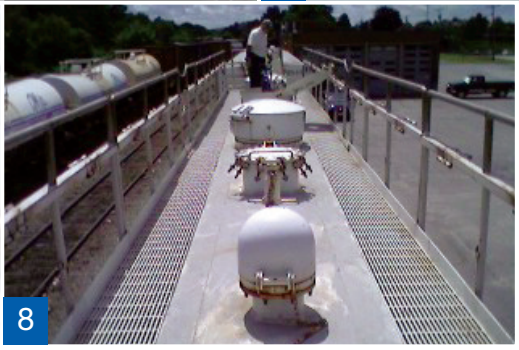
Contributed by: Gordon T. Riordon, Manager of Safety

1. TRANSCAER® train
2. DuPont TRANSCAER® cars



3. TRANSCAER® classroom
4. TRANSCAER® tank car

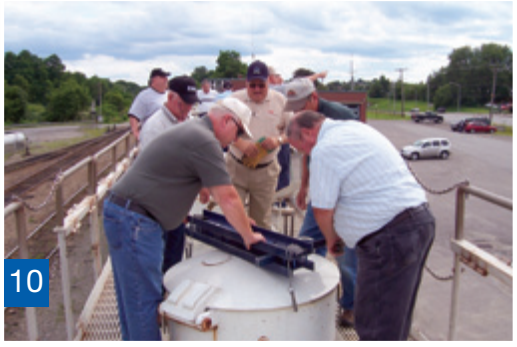
5. Fire Department Members training aboard tank car
6. Fire Department truck alongside TRANSCAER® cars



7. Inside the tank car dome
8. Multiple domes atop tank car

9. Hands on training for Emergency Responders
10. EMA members with instructor

All Photos by: Gordon T. Riordon



A COMMON LANGUAGE

A common language is a necessity in any interaction with others. Think how hard it would be to get anything done if you could not find a common language, in any form, to communicate your wants and needs. Thousands of years ago it was language that brought us together and allowed us to move out of caves and into societies.

Fast forward to now. Our lives have become so complex, our knowledge so vast, that a common language is no longer just about speech. Now, it must also encompass a common knowledge and understanding of the subject at hand.

Just imagine how difficult it would be to tell Thomas Jefferson about your daily activities. How could he even comprehend the concepts of today's technologies and lifestyles? Mention the word "computer" or "car" and you would most likely get a solid deer in the headlights look. How would you even begin to explain the concept of the internet to him?

Computers and the internet, for better or worse, have become an integral part of our daily lives. When a person has trouble with a computer or needs to be instructed on how to accomplish a task on it, they usually rely on an IT (Information Technologies) professional or an experienced user. This is where the issue of a common language rears its ugly head. Those of us in the IT industry have a penchant to use acronyms and cryptic terms to describe procedures, protocols, hardware and software technologies that we commonly use. It works to speed up the conversation when we are working with each other in the industry. But, to the average user, it is confusing and at times frustrating to deal with a technician who is using IT terms during a support call.

To alleviate some of this confusion and frustration here are some common terms that we may use, courtesy of Dell's glossary of computer terminology.

Adobe PDF: PDF is an open standard document format that can be easily shared between computer platforms. It is generally un-editable thus providing a secure format in which to publish a document.

Bandwidth: Bandwidth is the amount of information a network can carry in a certain period of time. When it comes to Internet access, larger bandwidth can mean faster connections, quicker downloads and smoother video playback.

Bluetooth®: Bluetooth is a wireless technology that allows devices to communicate at short range. A cell phone being used with a hands-free headset is one example. Sending a document between a Bluetooth-enabled laptop and printer is another.

Broadband: Broadband is another word for high-speed Internet. Because it transfers information quickly, broadband is ideal for downloading music and watching streaming videos. Also, unlike a dial-up connection, broadband allows access to the Internet without disrupting phone service.

Cache: A temporary storage area for frequently accessed information. The cache shortens the time it takes to access this information, relieves the burden from the main memory, and increases the overall speed of applications.

Display: The computer's monitor, the viewable area of which is called the screen. Resolution refers to the number of tiny squares, or pixels, viewable on the screen. A higher screen resolution equates to sharper visuals and more realistic video rendering.

Download: To transfer information from one computer to another. Downloading means to receive, and uploading means to transmit. Common downloads include MP3 files, software updates and desktop games.

Firewall: A boundary that helps keep computers on the Internet private. Firewall software helps prevent users from coming to a secure site, or conversely, keeps users inside the firewall from going out. Firewalls can also verify websites, helping to ensure they originate from an authorized source.

Firewire: A computer port, commonly used for external devices that need to transfer a lot of information quickly.

Graphics Card: A graphics card is an internal card dedicated solely to rendering graphics like photos or movies. The graphics card determines the number of colors, refresh rate and maximum resolution of the computer's display (which the display must be able to support). In other words, a better graphics card means better quality when watching DVDs on your computer.

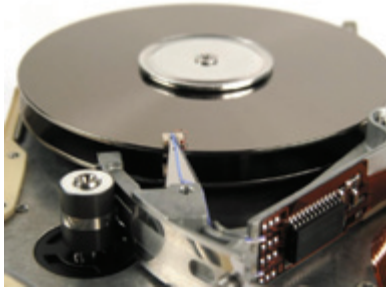
Graphics cards come in two flavors:

Integrated cards are less expensive, and slightly extend battery life as they are less demanding on power. Generally, integrated cards share your computer's memory and processor, your computer's memory and brain.

Dedicated graphics cards are the true performers. Gamers prefer dedicated graphics cards which come with their own memory and processor, so graphics are shown with greater resolution and quality.

When shopping for a graphics card, look for cards that have higher memory. Memory is measured in MB.

Hard Drive: The computer's hard drive is a storage device which stores your computer's important information such as programs and data files. Early systems had hard drives that could only hold a few movies but today's hard drives are expected to hold entire libraries of movies. Think of the hard drive as being a large closet where you keep all your stuff. The hard drive is where the computer keeps all your programs, files, photos or movies. So if you plan on storing movies or running many programs, then get a bigger hard drive or get an external hard drive. Most computers allow you to connect to an external hard drive. This is a good solution, as you have a back up for all your movies and photos. It also keeps your computer's hard drive uncluttered so your computer can work efficiently. External hard drives come in all sizes, and even a thousand gigabytes hard drive is reasonably priced. External hard drives also add the element of portability, making them an ideal solution for users who travel, or those who simply need more space for storage. Your computer's hard drive also plays a role in performance, as the amount of time it takes to start up your computer and load programs is related to the hard drive's speed. So make sure you get the top speed if purchasing a hard drive.



A COMMON LANGUAGE
CONTINUED

Hardware: The physical elements of the computer, such as the processor, hard drive, keyboard, and display. Whereas hardware is responsible for a specific task, software can be created, adapted or removed to suit a user's specific needs.

Hotspot: A wireless Internet connection available for public use. Beyond mere convenience, hotspots offer broadband Internet access with connection speeds similar to cable and DSL. While some hotspots charge for access, more and more are opening their networks for free. And the number of hotspots available continues to grow.

Internet: The Internet essentially links computers to one another, allowing them to speak the same language. Originally created by the U.S. Department of Defense, the Internet has become a fast fixture in contemporary life. From email to instant messaging, education to entertainment, the Internet is helping define the way people communicate in the modern world.

JPEG: A JPEG is a compressed file format that has become a standard for consumer digital photography. Files that are compressed are easier to view, download and store. The JPEG format strikes a good balance – compressing the file, yet retaining enough information to help keep the image resolution clear.

Modem: A device used to connect to the Internet using either cable or phone lines. Modems can be used to establish a dial-up, high-speed DSL, or Cable Internet connection. Current modems also compress the information they transfer, making them noticeably faster than older versions.

Motherboard: The computer's main circuit board. All internal components are attached or connected in some way to the motherboard. The motherboard holds the processor, the bus, memory sockets, expansion slots, and more. It acts as a conduit for power, and makes sure the various components can communicate.

Multimedia: A combination of media that may include still and moving images, illustration, text and sound. From educational games and business presentations to online encyclopedias, the use of multimedia in storytelling is becoming increasingly common in the digital age.

Operating System: The underlying software that allows the user and the computer to interact. The OS is the software platform necessary for the computer to run. It allows the computer's hardware and software applications to communicate.

Pixel: A pixel is the smallest unit of information in a digital image, resembling a tiny square. An image with a higher pixel count will have better resolution, and appear clearer to the naked eye. 72 pixels per inch (72 ppi) is the most common resolution on the Web.

Port: Ports allow external peripheral devices, such as printers and digital cameras, to connect to the computer. They also make it possible for computers to network together. Two of the most common ports, USB and Firewire, are plug-and-play, which means they begin communicating with the computer as soon as they're attached.

Processor: The processor is the computer's brain, responsible for controlling each program's functionality and speed. The processor speed is directly related to the PC's overall performance. Faster processors enhance the user's ability to run creative, entertainment, communication and productivity applications.

RAM: The computer's short-term memory, RAM stores information as programs are being used. RAM is one contributor to faster computing, most noticeable when multiple applications are being used at the same time.
Router: A small device that connects multiple computers together, providing Internet connectivity in a home or office. Broadband routers, such as cable and DSL, connect local networks to the wide area network of the Internet, allowing users to create a wireless hotspot within the home.

Search Engine: An Internet service that helps users to locate specific websites. Entering a word, phrase or topic into the search box will garner a host of related options. Experimenting with different search terms is the best way to achieve more accurate results.

Software: A program designed for a specific task that tells the computer what to do. System software is in charge of basic PC functionality, and network software allows any number of computers to communicate.

Sound Card: The sound card, or audio card, processes audio signals and sends them out from the computer. Dedicated cards, as opposed to integrated ones, are recommended for video editing, gaming, and music composition. Paired with high-end speakers, a dedicated sound card can support a surround-sound listening environment.

Storage: The hard drive stores files and programs, and is considered long-term memory. RAM, or short-term memory, stores information for the programs being used. Using external storage, from online services to flash drives, CDs and DVDs, can be a great way to back-up important files, or bring them on the go.

USB: A USB port allows a device like a mouse, printer, or digital camera to connect to your computer. To attach a USB device, simply find the matching slot and plug it in. The computer's operating system will detect the device and enable it to run without restarting your computer.

Wi-Fi: Wi-Fi is a wireless Internet connection that can be accessed by laptops, PDAs, and other portable devices. This wireless connection is called a "hotspot". Wi-Fi hotspots continue to multiply by the minute. Most major cities play host to several hotspots per block, and many are free to use.

Hopefully, with a better understanding of a basic IT language, the interactions between user and IT professional will be less confusing and more productive.

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